

### **Examiner's Amendment**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Michael J. Mallie, (Registration number: 36,591), on 7/16/08.
3. The claims have been amended as follows:
  1. (Currently Amended) A computer-implemented method for performing thread scheduling, the method comprising:
    - receiving thread objective data including a performance objective;
    - sampling a plurality of performance metric data points for each thread, wherein each data point varies as a function of scheduling quantum values, including using a sliding window to define a set of sampled performance metric data points during real-time sampling;
    - calculating a new scheduling quantum value by processing the plurality of performance metric data points according to the performance objective, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data

points, and wherein calculating the new scheduling quantum value includes using the defined set of sampled performance metric data points; and

adjusting a current scheduling quantum value to the new scheduling quantum value.

2. (Previously amended) The computer-implemented method of claim 1, wherein sampling the plurality of performance metric data points includes sampling a performance metric value at predetermined scheduling quantum values.

3. (Canceled)

4. (Canceled)

5. (Currently amended) A computer-implemented method for performing thread scheduling, the method comprising: The computer-implemented method of claim

3,

receiving thread objective data including a performance objective;  
sampling a plurality of performance metric data points for each thread,  
wherein each data point varies as a function of scheduling quantum values,  
including using a sliding window to define a set of sampled performance metric data points during real-time sampling;

calculating a new scheduling quantum value by processing the plurality of performance metric data points according to the performance objective, wherein the performance objective is to determine the new scheduling quantum value corresponding to a maximum of the set of sampled performance metric data points, and wherein calculating the new scheduling quantum value includes using the defined set of sampled performance metric data points; and  
adjusting a current scheduling quantum value to the new scheduling quantum value.

6. (Previously amended) The computer-implemented method of claim 1 ~~3~~, wherein the performance objective is to determine the new scheduling quantum value corresponding to an average of the set of sampled performance metric data points.

7. (Previously amended) A computer-implemented method for performing thread scheduling for multiple threads, the method comprising:

receiving thread objective data for a plurality of threads, including a performance objective for each thread of the plurality of threads;

sampling a plurality of performance metric data points for each thread of the plurality of threads, specific to a performance metric type, wherein each performance metric data point varies as a function of scheduling quantum values,

wherein sampling includes using a sliding window to define a set of sampled performance metric data points during real-time sampling;

determining a new performance objective based upon the performance objective for each of the plurality of threads;

calculating a new scheduling quantum value by processing the plurality of performance metric data points for each thread according to the new performance objective, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points, and wherein calculating the new scheduling quantum value includes using the defined set of sampled performance metric data points; and

adjusting a current scheduling quantum value to the new scheduling quantum value.

8. (Previously amended) The computer-implemented method of claim 7, wherein the processing the plurality of performance metric data points for each thread according to the new performance objective includes combining each function corresponding to each thread's performance metric data points to produce a new performance metric function.

9. (Previously amended) The computer-implemented method of claim 7, wherein determining the new performance objective includes choosing a performance

objective corresponding to a thread with a highest priority among the plurality of threads.

10. (Previously amended) A system, comprising:

a scheduling quantum optimizer device;

a thread metric module device to provide thread objective data including a performance objective to the scheduling quantum optimizer device; and

a performance collector ~~module~~ hardware device to sample a plurality of performance metric data points for each thread and provide the performance metric data points to the scheduling quantum optimizer device, wherein each performance metric data point varies as a function of scheduling quantum values, wherein the performance collector module device samples the plurality of performance metric data points by using a sliding window to define a set of sampled performance metric data points during real-time sampling;

the scheduling quantum optimizer device to process the plurality of performance metric data points according to the performance objective to provide a new scheduling quantum value to a process manager device, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points, and wherein the scheduling quantum optimizer device calculates the new scheduling quantum value using the defined set of sampled performance metric

data points, and further wherein the process manager device is to adjust a current scheduling quantum value to the new scheduling quantum value.

11. (Previously amended) The system of claim 10, wherein to sample the plurality of performance metric data points, the performance collector module device is operable to sample a performance metric value at predetermined scheduling quantum values.

12. (Previously amended) The system of claim 10, wherein to process the plurality of performance metric data points, the scheduling quantum optimizer device is operable to use a sliding window that defines a set of sampled performance metric data points during real-time sampling to calculate the new scheduling quantum value.

13. (Original) The system of claim 12, wherein the performance objective is to determine a scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points.

14. (Original) The system of claim 12, wherein the performance objective is to determine a scheduling quantum value corresponding to a maximum of the set of sampled performance metric data points.

15. (Original) The system of claim 12, wherein the performance objective is to determine a scheduling quantum value corresponding to an average of the set of sampled performance metric data points.

16. (Currently amended) A system, comprising:

a scheduling quantum optimizer device;

a thread metric module device to provide thread objective data for a plurality of threads, including a performance objective for each of the plurality of threads to the scheduling quantum optimizer device; and

a performance collector ~~module~~ hardware device to sample performance metric data points for each thread of the plurality of threads specific to a performance metric type, wherein each performance metric data point varies as a function of scheduling quantum values, and further wherein the performance collector module device samples using a sliding window to define a set of sampled performance metric data points during real-time sampling;

the scheduling quantum optimizer device to determine a new performance objective based upon the performance objective for each thread of the plurality of threads and to process the plurality of performance metric data points for each thread of the plurality of threads according to the new performance objective to provide a new scheduling quantum value to a process manager device, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data

points, and wherein the scheduling quantum optimizer device calculates the new scheduling quantum value using the defined set of sampled performance metric data points, wherein the process manager device is to adjust a current scheduling quantum value to the new scheduling quantum value.

17. (Previously amended) The system of claim 16, wherein to process the plurality of performance metric data points for each thread according to the new performance objective, the scheduling quantum optimizer device is to combine each function corresponding to performance metric data points for each thread to produce a new performance metric function.

18. (Previously amended) The system of claim 16, wherein to determine the new performance objective, the scheduling quantum optimizer device is to select a performance objective corresponding to the thread with a highest priority among the plurality of threads.

19. (Currently amended) A machine-accessible storage medium that provides instructions that, if executed by a machine, will cause the machine to perform operations comprising:

receiving thread objective data including a performance objective;  
sampling a plurality of performance metric data points for each thread, wherein each data point varies as a function of scheduling quantum values, including



using a sliding window to define a set of sampled performance metric data points during real-time sampling;

calculating a new scheduling quantum value by processing the plurality of performance metric data points according to the performance objective, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points, and wherein calculating the new scheduling quantum value includes using the defined set of sampled performance metric data points; and  
adjusting a current scheduling quantum value to the new scheduling quantum value.

20. (Previously amended) The machine readable storage medium of claim 19, wherein the instructions for executing the method to perform thread scheduling are coded into an operating system.

21. (Previously amended) The machine readable storage medium of claim 19, wherein the instructions for executing the method to perform thread scheduling are coded into a high level application.

22. (Previously amended) The machine readable storage medium of claim 21, wherein the high level application is layered above an operating system as a system service.

23. (Previously amended) The machine readable storage medium of claim 19, wherein sampling the plurality of performance metric data points includes sampling a performance metric value at predetermined scheduling quantum values.

24. (Canceled)

25. (Previously amended) The machine readable storage medium of claim 19, wherein the performance objective is to determine the improved scheduling quantum value corresponding to a reduced performance metric value.

26. (Previously amended) The machine readable storage medium of claim 19, wherein the performance objective is to determine the improved scheduling quantum value corresponding to an increased performance metric value.

27. (Previously amended) The machine readable storage medium of claim 19, wherein the performance objective is to determine the improved scheduling quantum value corresponding to an average performance metric value.

28. (Currently amended) A machine-accessible storage medium that provides instructions that, if executed by a machine, will cause the machine to perform operations comprising:

receiving thread objective data for a plurality of threads, including a performance objective for each of the plurality of threads;

sampling a plurality of performance metric data points for each thread of the plurality of threads, specific to a performance metric type, wherein each performance metric data point varies as a function of scheduling quantum values, including using a sliding window to define a set of sampled performance metric data points during real-time sampling;

determining a new performance objective based upon the performance objective for each of the plurality threads;

calculating a new scheduling quantum value by processing the plurality of performance metric data points for each thread according to the new performance objective, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points, and wherein calculating the new scheduling quantum value includes using the defined set of sampled performance metric data points; and

adjusting a current scheduling quantum value to the new scheduling quantum value.

29. (Previously amended) The machine readable storage medium of claim 28, wherein processing the plurality of performance metric data points for each thread according to the new performance objective includes combining each function corresponding to each thread's performance metric data points to produce a new performance metric function.

30. (Previously amended) The machine readable storage medium of claim 29, wherein determining the new performance objective includes choosing a performance objective corresponding to a thread with a highest priority among the plurality of threads.

31. (Currently amended) A portable media device, comprising;

a memory module to store data;

a processor to access data stored in the memory module to receive thread objective data including a performance objective, to sample a plurality of performance metric data points for each thread using a sliding window to define a set of sampled performance metric data points during real-time sampling, wherein each data point varies as a function of scheduling quantum values, to process the plurality of performance metric data points according to the performance objective to calculate a new scheduling quantum value, and to adjust a current scheduling quantum value to the new scheduling quantum value, wherein the performance objective is to determine the new scheduling quantum

value corresponding to a minimum of the set of sampled performance metric data points, and wherein the processor calculates the new scheduling quantum value using the defined set of sampled performance metric data points; and

~~one of a battery and fuel cell to power~~ the portable media device, including the processor and the memory.

32. (Previously amended) The portable media device of claim 31, wherein to process the plurality of performance metric data points, the processor is operable to use a sliding window that defines a set of sampled performance metric data points during real-time sampling to calculate the new scheduling quantum value.

33. (Original) The portable media device of claim 32, wherein the performance objective is to determine a scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points.

34. (Currently amended) A portable media device, comprising;

a memory module;

a processor to access data stored in the memory module to receive thread objective data for a plurality of threads including a performance objective for each thread of the plurality of threads, to sample a plurality of performance metric data points for each thread of the plurality of threads using a sliding window to define a set of sampled performance metric data points during real-time sampling,

specific to a performance metric type, wherein each data point varies as a function of scheduling quantum values, to determine a new performance objective based upon the performance objective for each thread of the plurality of threads, to process the plurality of performance metric data points for each thread according to the new performance objective to calculate a new scheduling quantum value, and to adjust a current scheduling quantum value to the new scheduling quantum value, wherein the performance objective is to determine the new scheduling quantum value corresponding to a minimum of the set of sampled performance metric data points, and wherein the processor calculates the new scheduling quantum value using the defined set of sampled performance metric data points; and

~~one of a battery and fuel cell to power~~ the portable media device, including the processor and the memory.

35. (Previously amended) The system of claim 34, wherein to process the plurality of performance metric data points for each thread according to the new performance objective, the processor is to combine each function corresponding to performance metric data points for each thread to produce a new performance metric function.

36. (Original) The system of claim 34, wherein to determine the new performance objective, the processor is to select a performance objective corresponding to a thread with a highest priority among the plurality of threads.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMQUY TRUONG whose telephone number is (571)272-3773. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Camquy Truong  
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